Existing Regional Transportation Conditions

As part of the development of the WRATS 2040 LRTP a survey of existing transportation system conditions data was made to begin to establish baseline conditions. Forthcoming implementation of the MPO Statewide and Metropolitan Planning Rule, and rules associated with the National Transportation Goals and Performance Measures, will require MPOs to develop transportation performance measures and targets in coordination with the state DOTs to regularly assess transportation conditions and how the implementation of transportation plans, programs, and projects assist in achieving those targets.

In order to adequately assess the condition of the regional transportation system data will need to be developed or compiled and analyzed with respect to safety, security, physical condition, and operations. Some of this data is readily available from national or state sources but some is not. Data is collected and made available more frequently for some facets of the transportation system than for others, and for some subsystems the data is more complete, such as the National Highway System (NHS) which there is more data for than for roads not on the NHS.

The data below present current conditions for a variety of aspects of the transportation system in the Warner Robins Region.

Road and Bridge Conditions

Pavement Conditions
The Highway Performance Monitoring System (HPMS) is a data set maintained by USDOT FHWA for roads classified as collector and above that includes information on road condition, design, scale, and usage. Geocoded HPMS data is available through the National Transportation Atlas Database (NTAD).

Figure 1 shows the extent of the HPMS network in the WRATS region and shows the International Roughness Index (IRI), a pavement condition measure. An IRI of greater than 170 (170 inches per mile) is considered to be in poor condition. As can be seen in Figure 1 there are few roads with poor pavement condition in the region. The roads with poor pavement condition include SR247C/Watson Boulevard from SR247 west to Diggs Boulevard and a small section of SR11/SR49/US41 crossing from Houston County into Bibb County.

Bridge Conditions
The National Bridge Inventory (NBI) is a complete data set of the nation's public bridges maintained by USDOT FHWA from information provided by each state department of transportation. Geocoded bridge data is available through the National Transportation Atlas Database (NTAD). The data includes information on bridge location, structure, dimension, usage, and conditions. Each bridge has a unique identification number. There are 123 bridges in the NBI data for the WRATS region.

Figure 2 shows the location and structural condition rating of NBI bridges in the WRATS region. Figure 2 also shows the National Highway Planning Network (NHPN). The NHPN is the NHS plus all roads classified as principal and minor arterials, and so represents most significant roads. As can be seen in Figure 2 there are only two bridges in the region that rate a poor condition rating in the NBI. One of these bridges is on SR247 at Sandy Run Creek. The other is on Booker Street, a local road, across a Bay Gall Creek tributary north of Green Street in an area that is being redeveloped.

Figure 1

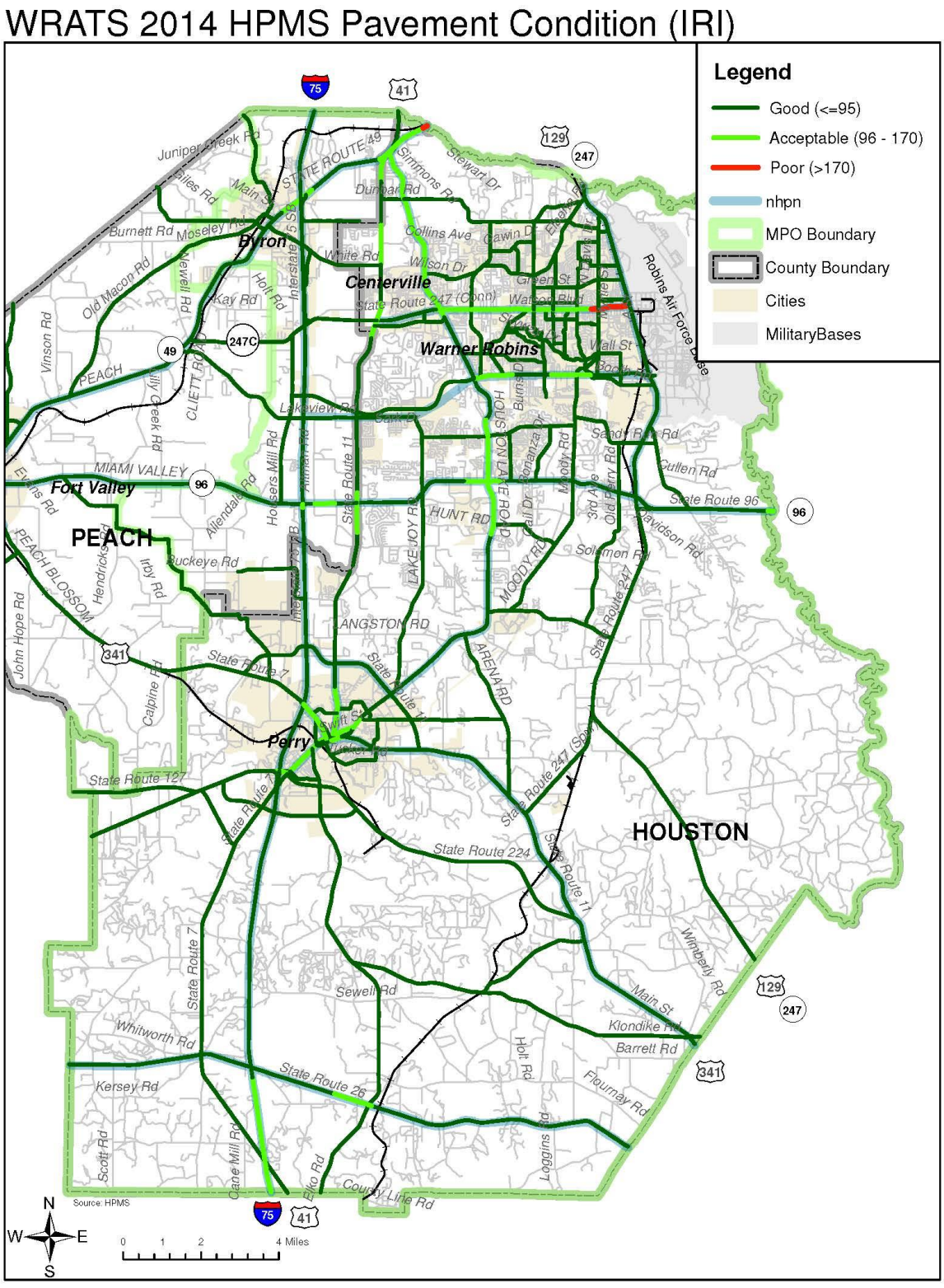
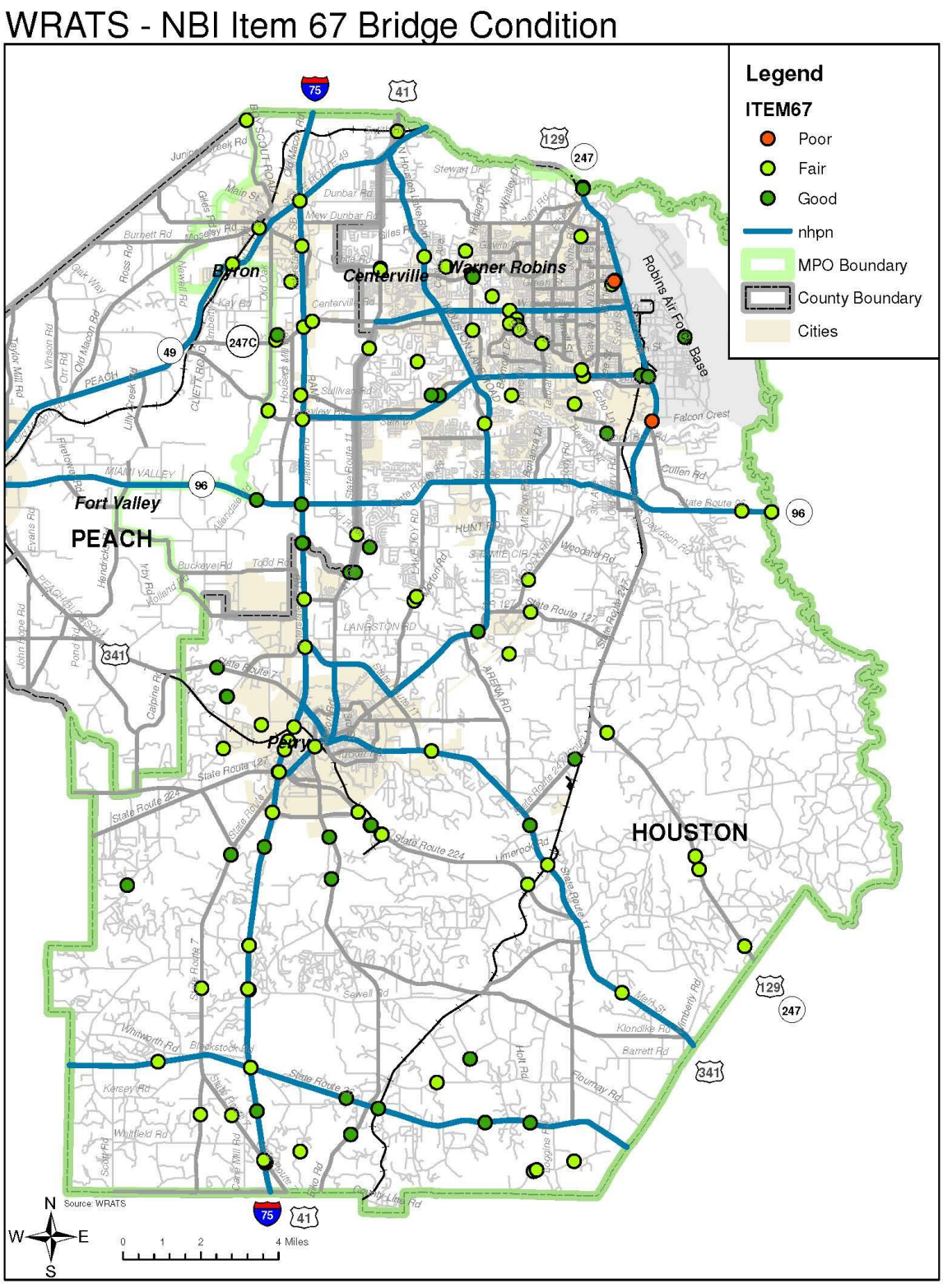

WRATS 2014 HPMS Pavement Condition (IRI)
Legend
Good (<=95)
Acceptable (96 - 170)
Poor (>170)
nhpn
MPO Boundary
County Boundary
Cities
MilitaryBases
Byron
Centerville
Warner Robins
Fort Valley
PEACH
Perry
HOUSTON
Robins Air Force Base
Source: HPMS
N
W
E
S
0 1 2 4 Miles

Figure 2


WRATS - NBI Item 67 Bridge Condition
Legend
ITEM67
Poor
Fair
Good
nhpn
MPO Boundary
County Boundary
Cities
Byron
Centerville
Warner Robins
Robins Air Force Base
Fort Valley
PEACH
Perry
HOUSTON
Source: WRATS
N
W
E
S
0 1 2 4 Miles

Roadway Traffic and Operating Conditions

Traffic Volumes

Traffic volumes are an important metric of road usage and relative importance. Combined with other measures such as functional class, number of lanes, truck volumes, traffic and access controls, and adjacent land use characteristics, traffic volumes can tell a lot about the functioning of a road network. In addition they are a basic measure used for validation of regional travel demand models.

The HPMS provides recent data for Average Annual Daily Traffic (AADT). Figure 3 shows AADT from HPMS for the higher level WRATS road network. The color coded roads show the volume of traffic in gradations from low (dark green) to high (red) for total traffic (both directions). As can be seen in Figure 3, I-75 has the highest traffic volumes in the WRATS region. One section of SR47C/Watson Boulevard also has an AADT in excess of 35,000. Most high volume roads in the region are located primarily within Houston County from SR96 to the north which also tends to be where the highest density of development is located.

Level of Service

Road level of service (LOS) is a measure of congested conditions, or the likelihood of congested conditions, on the road system. At a regional level the WRATS travel demand model 2010 base year produces volumes and a generalized road capacity that can be used to develop LOS thresholds. Although the regional travel demand model does not include all roads, it does include the higher level road system. The regional model does not include traffic or access controls directly and will not capture highly localized conditions. LOS is a grade from A through F in which A-C represent relatively uncongested conditions and LOS D-F represent increasingly congested conditions in which congestion occurs regularly.

The regional model currently produces only average daily conditions but should reflect roads that are likely to have recurrent congestion on a daily basis fairly well. Figure 4 shows the regional travel demand model LOS for the 2010 base year conditions. As can be seen in Figure 4 there are relatively few roads in the 2010 base year model with LOS of D-F. Those roads with poor LOS tend to be in the northern portion of the MPO study area, north of and including SR96.

Travel Time Data and Speeds

Travel time data from cell phone tracking or probe vehicles and Geographic Positioning Systems (GPS) devices is now available, although much of this data is proprietary and available only at substantial cost. These technologies promise to bring vast amounts of actual data to transportation planning and operations management, and are already being used in many locations.

USDOT FHWA partnered with the American Transportation Research Institute for several years to develop truck travel times from Fleet GPS data and make that dataset called NCAST available to public agencies. Unfortunately only the Interstate System was covered. Truck travel speeds for June 2012 on I-75 in the WRATS area appear in Figure 5. More recently USDOT FHWA has partnered with HERE to provide an expanded dataset of travel time data that covers the National Highway System in the National Performance Management Research Data Set (NPMRDS). The NPMRDS provides travel time data in 5 minute intervals for every hour of the day and every day of the year but only for the NHS.

Figure 3

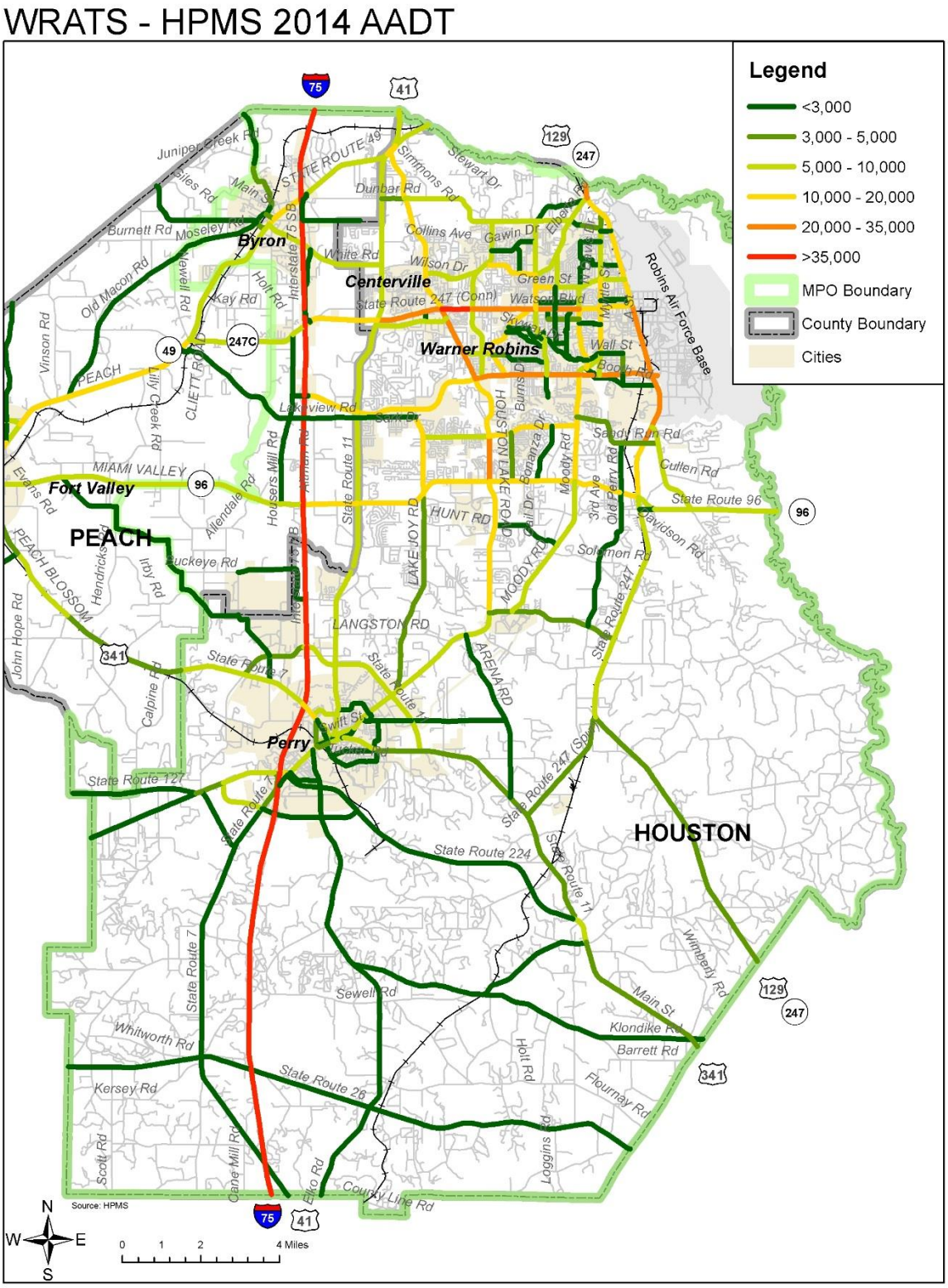

WRATS - HPMS 2014 AADT
Legend
<3,000
3,000 - 5,000
5,000 - 10,000
10,000 - 20,000
20,000 - 35,000
>35,000
MPO Boundary
County Boundary
Cities
Byron
Centerville
Warner Robins
Fort Valley
PEACH
Perry
HOUSTON
Robins Air Force Base
STATE ROUTE 49
Interstate 75 S.B.
Interstate 75 N.B.
State Route 11
State Route 247 (Conn)
State Route 247 (Spur)
State Route 96
State Route 7
State Route 127
State Route 224
State Route 26
HUNT RD
LANGSTON RD
LAKE JOY RD
MOODY RD
HOUSTON LAKE RD
ARENA RD
Source: HPMS
N
W
E
S
0 1 2 4 Miles

Figure 4

WRATS 2010 Road Level of Service

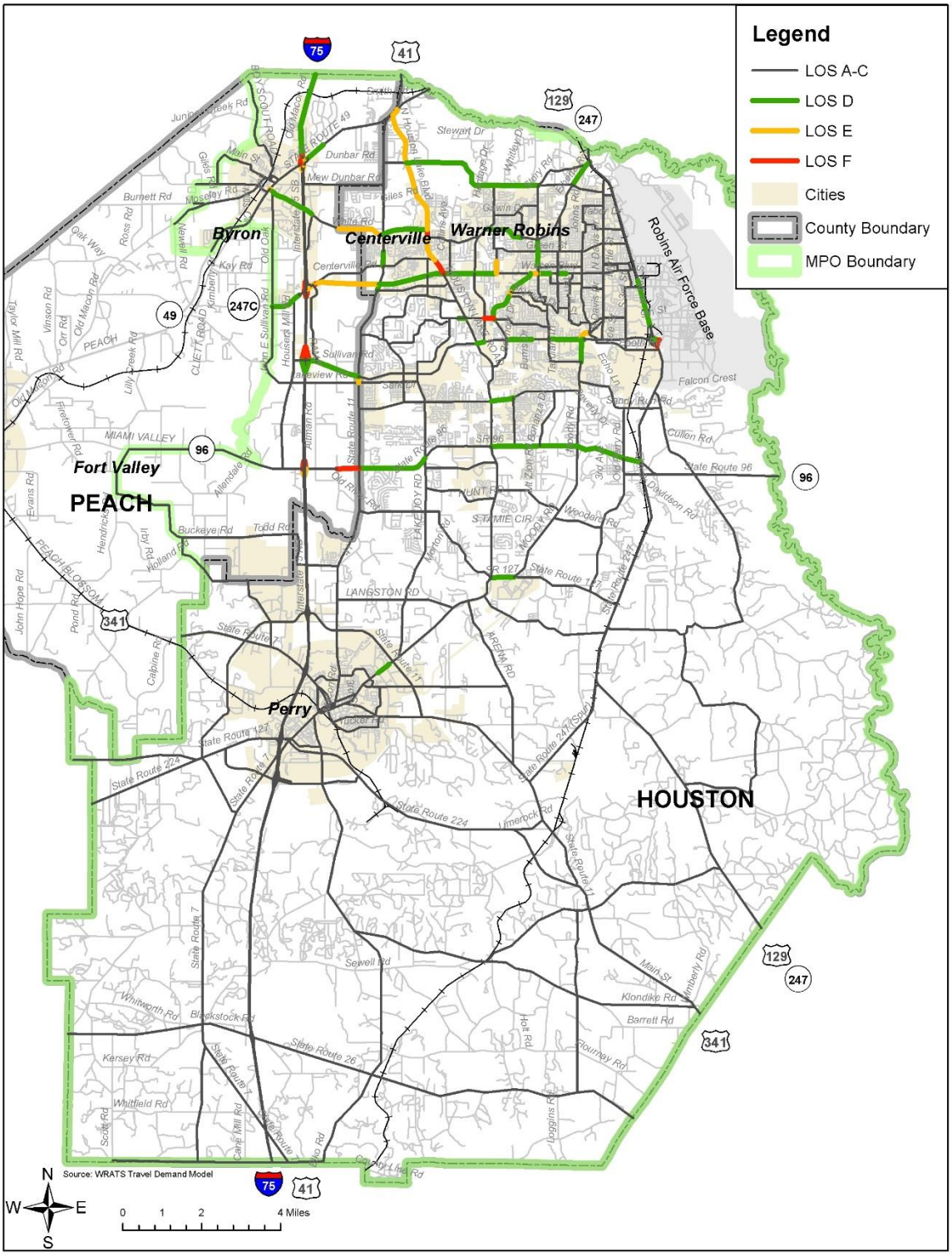
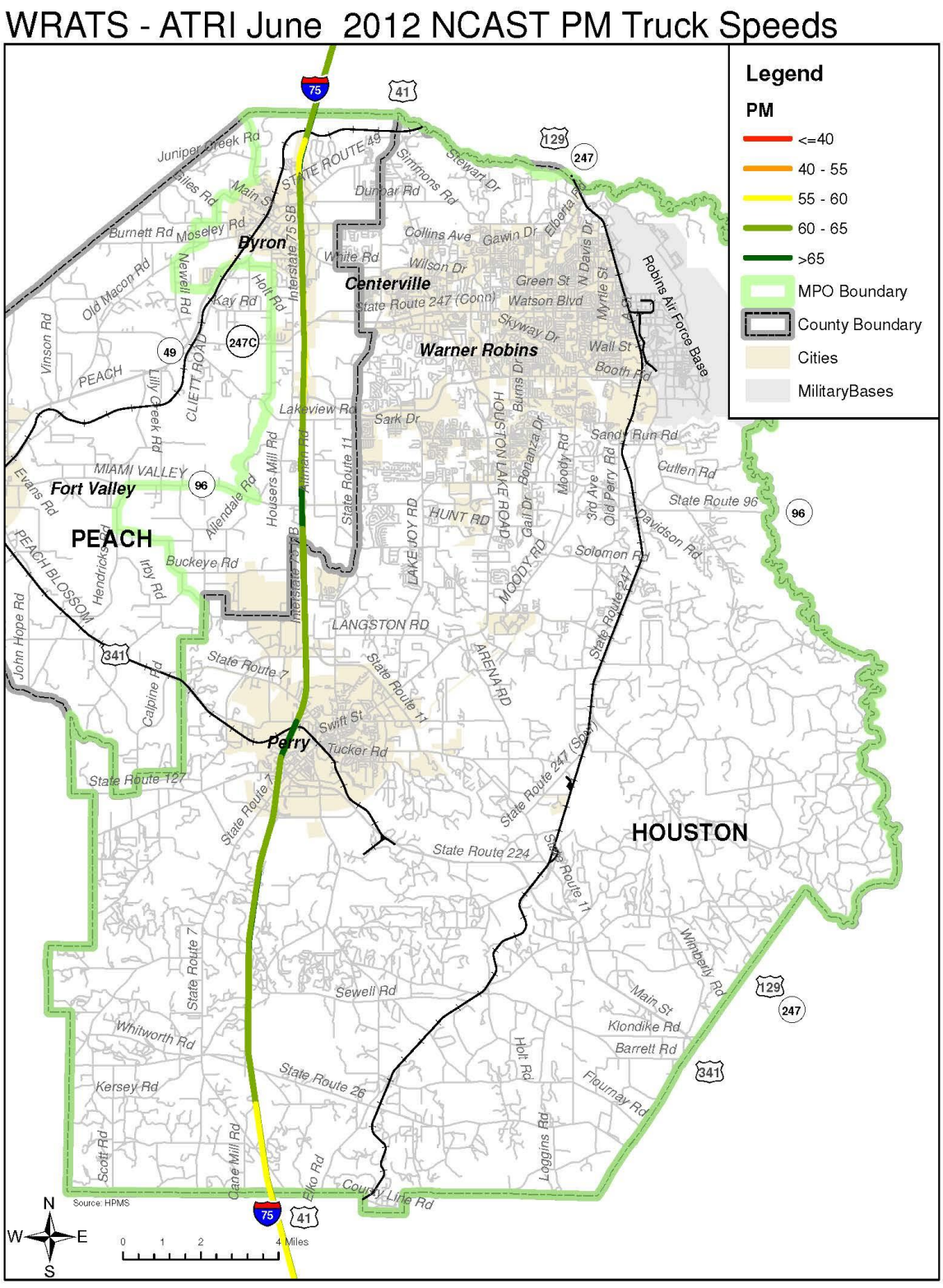


Figure 5


WRATS - ATRI June 2012 NCAST PM Truck Speeds
Legend
PM
<=40
40 - 55
55 - 60
60 - 65
>65
MPO Boundary
County Boundary
Cities
MilitaryBases
Byron
Centerville
Warner Robins
Fort Valley
PEACH
Perry
HOUSTON
Robins Air Force Base
Source: HPMS
N
W
E
S
0 1 2 4 Miles

Safety

Crash Data

GDOT provides crash data through their on-line mapping system GeoTRAQS from the Georgia Electronic Accident Reporting System (GEARS) database. The data include longitude and latitude coordinates of crash locations so the crash locations can be mapped. The data also includes an indication of crash severity which allows fatal crash locations and injury accident locations to be differentiated. For the period 2009 – 2012, the most recent currently available, there were 39 fatalities due to road crashes and just over 5,000 injuries. Figure 6 shows fatal accident locations and Figure 7 shows injury accident locations. In some instances a single location represents a crash with multiple fatalities or injuries, or both fatalities and injuries.

Of the 39 road crash fatalities in the region over the 3 year period, 25 were in Houston County on or north of SR96, primarily on the higher level road system. Only 2 road crash fatalities were located in the Peach County portion of the MPO area. Of the 5,000 plus roadway crash injuries, approximately 70% (3,500) occurred in the same portion of Houston County. About 7% (330) roadway crash injuries occurred in the Peach County portion of the MPO area.

Fatal Crash Rates

Fatal crash rates from the National Highway Traffic Safety Administration (NHTSA) by mode per 100,000 population for the period 2009 to 2013 are shown in Table 1 for Houston and Peach County and the State of Georgia. As can be seen in table 1, the trend for motor vehicle crash rates is downward during this period with a significant reduction in both Houston and Peach Counties. Trends for pedestrian and bicyclist fatal crashes are also downward though less significantly, perhaps because pedestrian and bicyclist fatalities are comparatively rare.

Table 1

Pedestrian Fatal Crash Data for Houston and Peach Counties (2009 - 2013)

	Year					Fatalities Per 100K Population				
County	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Houston	1	2	2	3	1	0.73	1.42	1.39	2.05	0.68
Peach	0	0	0	1	0	0.00	0.00	0.00	3.63	0.00
GA	152	168	130	167	176	1.58	1.56	1.55	1.53	1.52

Bicyclist Fatal Crash Data for Houston and Peach Counties (2009 - 2013)

	Year					Fatalities Per 100K Population				
County	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Houston	0	0	1	0	0	0.00	0.00	0.69	0.00	0.00
Peach	1	0	0	0	0	3.64	0.00	0.00	0.00	0.00
GA	21	18	14	17	28	0.22	0.22	0.21	0.21	0.21

Motor Vehicle Fatal Crash Data for Houston and Peach Counties (2009 - 2013)

	Year					Fatalities Per 100K Population				
County	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
Houston	17	18	11	11	7	12.37	12.79	7.63	7.53	4.74
Peach	7	4	3	4	3	25.48	14.40	10.88	14.50	11.11
GA	1,119	1,061	1,082	1,008	975	11.63	10.92	11.03	10.16	9.76

Source: NHTSA

At-Grade Railroad Crossings

USDOT Federal Railroad Administration (FRA) maintains data for all railroad crossings. Each railroad crossing has a unique identification code. Geocoded rail crossing data is available through the National Transportation Atlas Database (NTAD). The Figure 8 shows the locations of rail crossings in Houston and Peach Counties. Within Houston and Peach Counties there are 76 railroad crossings of which 66 are at-grade crossings.

The USDOT Federal Railroad Administration (FRA) produces a dataset for all at-grade rail crossings called the Web Based Accident Prediction System (WBAPS). The WBAPS uses recent information about accidents at at-grade rail crossings and operating conditions including the volume of rail and auto traffic at these crossings to come up with a predicted accident probability. The WBAPS includes the unique railroad crossing identification code so the WBAPS data can be linked to the geocoded rail crossing locations. The FRA cautions that the WBAPS should only be used as indicative of where improvements to rail safety might be warranted or deserve further investigation.

The WBAPS does not produce data for at-grade rail crossings for inactive rail lines or those that have only limited use. As can be seen in Figure 9, within the MPO boundary there are 24 at-grade rail crossings for which the WBAPS provides a probability of a crash occurring within the next year. Of these 24 locations, only 2 have a probability of greater than 8%. These 2 crossings are located in the northeast portion of the study area at crossings with the Norfolk Southern Railroad tracks at Elberta Road and Ignico Drive.

Figure 6

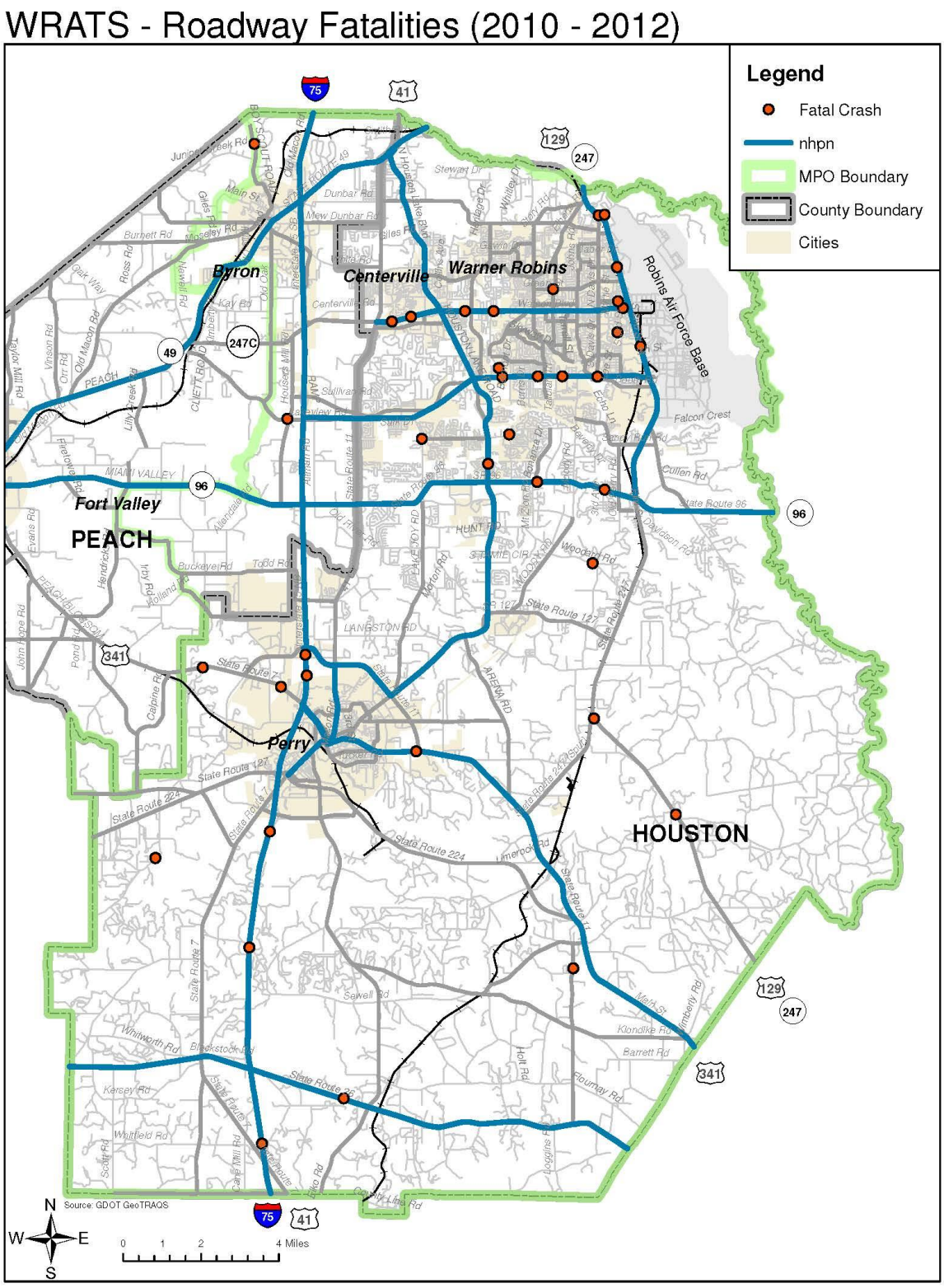

WRATS - Roadway Fatalities (2010 - 2012)
Legend
Fatal Crash
nhpn
MPO Boundary
County Boundary
Cities
Byron
Centerville
Warner Robins
Robins Air Force Base
Fort Valley
PEACH
Perry
HOUSTON
Source: GDOT GeoTRAQS
N
W
E
S
0 1 2 4 Miles

Figure 7

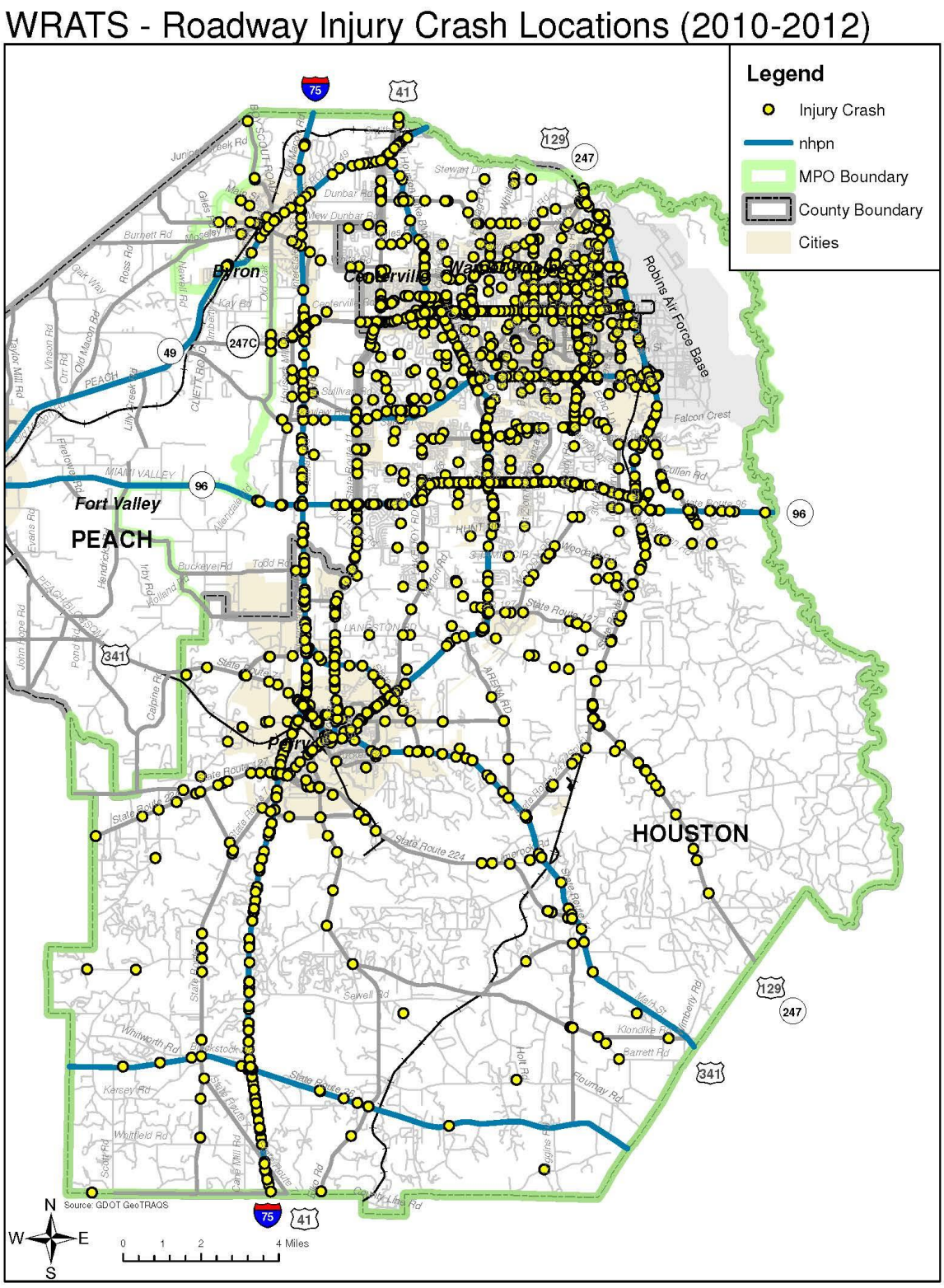

WRATS - Roadway Injury Crash Locations (2010-2012)
Legend
Injury Crash
nhpn
MPO Boundary
County Boundary
Cities
Byron
Centerville
Warner Robins
Fort Valley
PEACH
Perry
HOUSTON
Robins Air Force Base
Source: GDOT GeoTRAQS
N
W
E
S
0 1 2 4 Miles

Figure 8

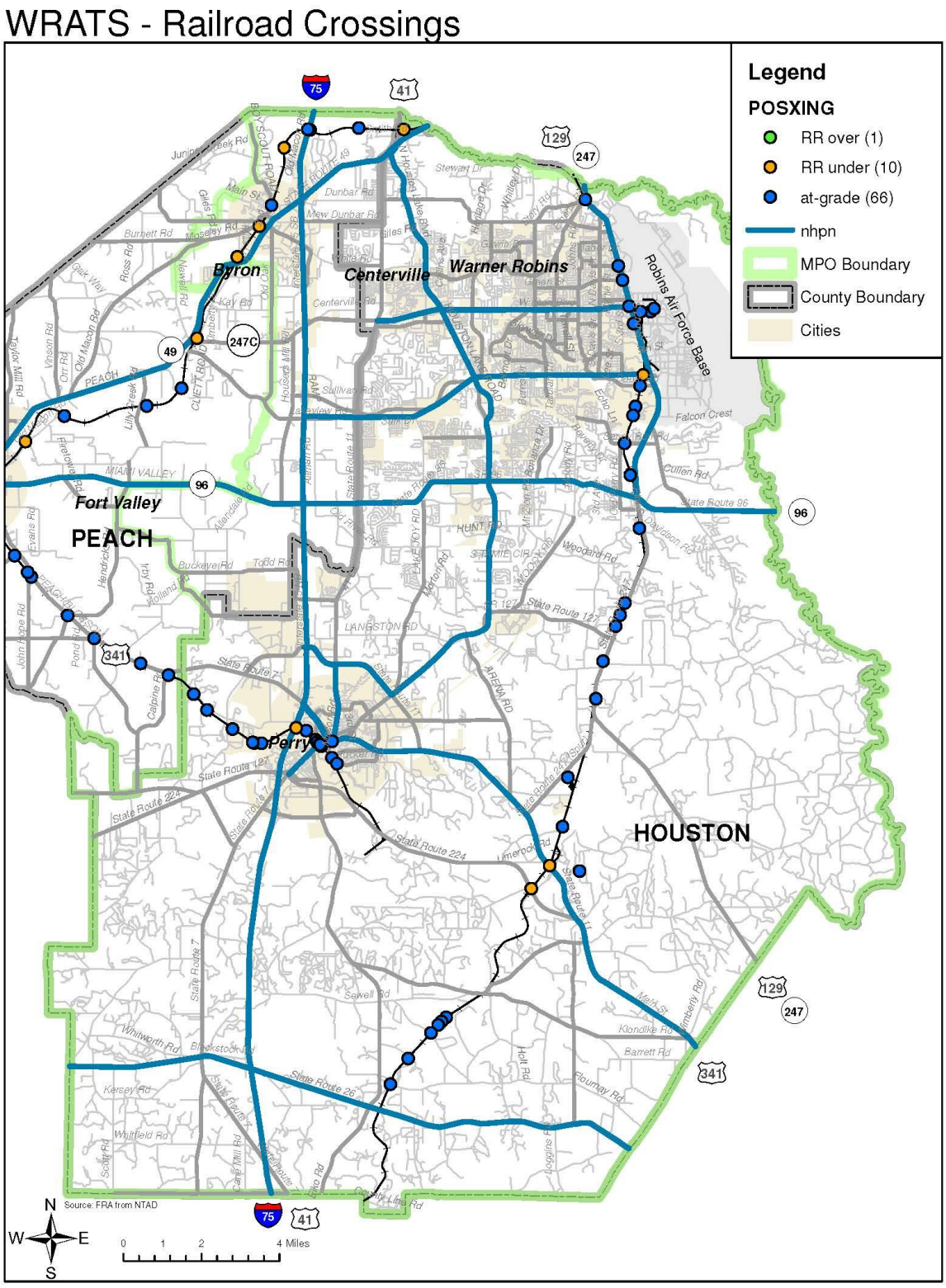
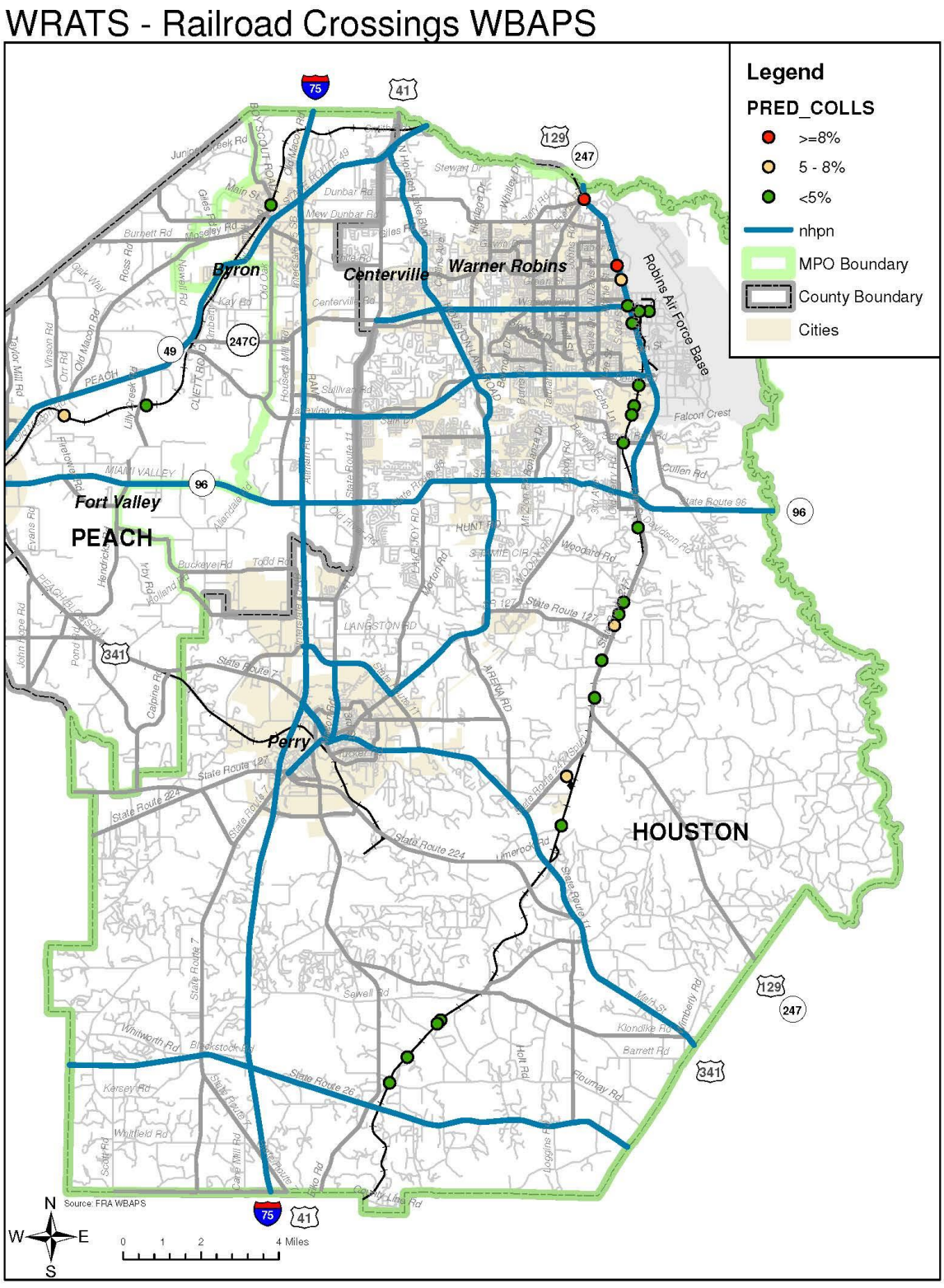

WRATS - Railroad Crossings
Legend
POSXING
RR over (1)
RR under (10)
at-grade (66)
nhpn
MPO Boundary
County Boundary
Cities
Byron
Centerville
Warner Robins
Robins Air Force Base
Fort Valley
PEACH
Perry
HOUSTON
Source: FRA from NTAD
N
W
E
S
0 1 2 4 Miles

Figure 9


WRATS - Railroad Crossings WBAPS
Legend
PRED_COLLS
>=8%
5 - 8%
<5%
nhpn
MPO Boundary
County Boundary
Cities
Byron
Centerville
Warner Robins
Robins Air Force Base
Fort Valley
PEACH
Perry
HOUSTON
Source: FRA WBAPS
N
W
E
S
0 1 2 4 Miles